

We claim:

- 5 1. An optical filter for viewing an object, the filter having a spectral transmittance that includes an object-contrast spectral window and a background spectral window.
2. The filter of claim 1, wherein the spectral transmittance of the filter includes a spectral-width window.
- 10 3. The filter of claim 1, wherein the background spectral window is a wavelength range from about 540 nm to about 560 nm.
4. The filter of claim 1, wherein the background spectral window is a wavelength range of from about 530 nm to about 570 nm.
- 15 5. The filter of claim 1, wherein the background window corresponds to at least a portion of a spectral reflectance of vegetation.
6. The filter of claim 1, wherein the object-contrast window corresponds to 20 a wavelength-conversion spectrum of light produced by the object.
7. The filter of claim 6, wherein the background spectral window is a wavelength range of from about 530 nm to about 570 nm.
- 25 8. The filter of claim 7, wherein the filter includes a spectral-width window.

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9. The filter of claim 7, wherein the spectral-width window includes wavelengths greater than about 610 nm.

10. An optical filter having a first spectral window selected to preferentially transmit light from an object and a second spectral window selected to preferentially transmit light from a background.

11. The optical filter of claim 10, wherein the first spectral window is selected to transmit wavelength-converted light from the object.

12. The optical filter of claim 10, wherein the first spectral window is selected to transmit light reflected by the object.

13. Eyewear for viewing of an object with respect to a background, comprising:
a frame; and
at least one lens configured to be placed with respect to a wearer's eyes so that the wearer looks through the lens, the lens defining a spectral transmittance having an object-contrast spectral window and a background spectral window.

14. The eyewear of claim 10, wherein the background spectral window corresponds to a wavelength range in which the background is reflective.

15. The eyewear of claim 10, wherein the background spectral window corresponds to a reflectance spectrum of vegetation.

16. The eyewear of claim 10, wherein the object-contrast window corresponds to a spectrum of wavelength-converted light produced by the object.

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17. The eyewear of claim 10, wherein the lens defines a spectral-width window.

5 18. Eyewear, comprising an optical filter that includes an object-contrast spectral window and a background spectral window.

10 19. The eyewear of claim 18, wherein the object-contrast spectral window corresponds to an object-specific spectral reflectance.

20. The eyewear of claim 18, wherein the object-contrast spectral window corresponds to an object-specific wavelength-conversion spectrum.

15 21. Activity-specific eyewear, comprising:
a lens having a spectral transmittance that includes a background spectral window and an object-contrast spectral window; and
a frame configured to retain and situate the lens so that a wearer views through the lens with the eyewear as worn.

20 22. The eyewear of claim 21, wherein the lens is a unitary lens and is situated by the frame so that a wearer views through the lens with both eyes with the eyewear as worn.

25 23. The eyewear of claim 21, wherein the object-contrast spectral window corresponds to a spectrum of wavelength-converted light produced by a golf ball.

24. The eyewear of claim 21, wherein the object-contrast spectral window corresponds to a spectrum of light received from an activity-specific object.

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25. The eyewear of claim 21, wherein the background spectral window corresponds to a spectrum of light received from an activity-specific background.

5 26. A golf ball, comprising a cover that includes a fluorescent material that produces fluorescence in a spectral region corresponding to a spectral window of a viewing filter.

10 27. A method of selecting a filter for viewing an object with respect to a background, the method comprising:
selecting an object-contrast spectral window corresponding to radiation received from the object;
selecting a background spectral window corresponding to radiation received from the background; and
15 providing an optical filter that includes the object-contrast spectral window and the background spectral window.

20 28. The method of claim 27, wherein the object-contrast spectral window and the background spectral window are transmission windows.

29. The method of claim 27, further comprising:
selecting a spectral-width window; and
providing an optical filter that includes the spectral-width window.

25 30. The method of claim 27, wherein the object-contrast window corresponds to a reflectance spectrum of the object.

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31. The method of claim 27, wherein the object-contrast window corresponds to a wavelength-conversion spectrum of radiation from the object.

32. The method of claim 27, wherein the background spectral window
5 corresponds to a reflectance spectrum of the background.

33. The method of claim 27, wherein the object-contrast spectral window, the background spectral window, and the spectral-width window are wavelengths from about 440 nm to about 470 nm, about 510 nm to about 580 nm, and about 600 nm to
10 about 650 nm, respectively.

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